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Do Regulators Search for the Quiet Life? The Relationship Between Regulators and the Regulated in Banking

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Abstract: In some industries, firms are able to choose who regulates them. There is a long debate over whether regulatory competition is beneficial or whether it leads to a "race for the bottom." We introduce another possible issue with regulation. Regulators may take actions intended to minimize the effort they spend on work. Using banking as an example, we test this "quiet life" hypothesis against other explanations of regulatory behavior. Banks are able to switch among three options for a primary federal regulator: the OCC, the Federal Reserve, and the FDIC. We examine why they switch and what the results of switches are. We find support for the hypothesis that competition among regulators has beneficial aspects. Regulators seem to specialize, offering banks that are changing strategy the ability to improve performance by switching regulators. There is also evidence that the ability to switch regulators allows banks to get away from an examiner that desires a quiet life.

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Do Regulators Search for the Quiet Life? The Relationship Between Regulators and the Regulated in Banking

Should firms be able to choose who regulates them? This question arises in many different contexts. In securities law, antitrust enforcement, and environmental policy, there are arguments over whether the main regulatory authority should be at the state or federal level. To the extent that firms select where to incorporate and locate factories, state chartering regulation allows them to pick their regulator. The formation of the European Union opened up the question of whether to harmonize policy across nations. Without harmonization, firms can migrate to the country with the laxest regulation. This paper studies banking, where there have been debates over the optimal regulatory structure since at least the National Banking Act of 1863.

The answer to how many regulators there should be depends on the extent to which regulators attempt to serve the broad public interest versus acting in their private or parochial interest. For example, the 1980s saw the worst crisis in banking since the Great Depression. Some critics blame the crisis partially on regulators, saying they let banks take excessive risk. Did competition among regulators exacerbate or mitigate the banking crisis? This paper examines the impact of regulatory structure using banking as an example. We offer some evidence on whether bank regulators act in their own interest, and if so, how. Our sample includes both the crisis period of the 1980s and the healthier banking industry of the 1990s.

The banking industry offers an excellent opportunity to study regulatory behavior because commercial banks can choose among three primary federal regulators. The primary regulator depends on a bank's chartering agency and on whether it is a Federal Reserve System ("Fed") member. A nationally-chartered bank is regulated by the Office of the Comptroller of the Currency (the "OCC"). A state-chartered bank has the Fed as its primary federal regulator if it is a Fed member and the Federal Deposit Insurance Company (the "FDIC") otherwise.[1] To examine how the regulatory structure interacts with the risk and return choices of banks, we focus on banks that switch primary regulators, asking why banks switch and, after they do, what the effect on performance is.

The existing literature on regulatory structure focuses on whether there is a "race for the bottom" among regulatory agencies. Since the budget of an agency depends in part on the number and size of the firms it regulates, regulators might compete against each other by offering lenient treatment in order to attract firms. When Chase Manhattan Bank elected to have a state charter rather than a national one after its merger with Chemical Bank in 1995, the OCC lost fees equal to 2% of its budget. If the OCC was concerned with maximizing its budget, it would have

[1] Regulatory authority for state-chartered banks is shared with the appropriate state chartering agencies.

an incentive to remove burdens on Chase Manhattan (or its managers) to get them back to the OCC.

Another potential drawback of having multiple regulatory agencies from which to choose is that the agencies may respond to their constituencies but ignore externalities. When externalities are important, control by local agencies may lead to too little regulation (Baumol and Oates, 1988; Stewart, 1992). As an example, for many years Britain did not control sulfur emissions from its power plants because prevailing winds blew them offshore, with most of the damage being felt in continental Europe (Lomas, 1988). We do not examine this here, since this sort of externality is not a big problem in banking.

Regulatory competition also may be a good thing. Tiebout (1956) presents a model of public good provision by local communities that has often been adapted to other issues of regulation. He shows that under certain conditions (including no externalities and costless mobility), regulatory competition leads to optimal standard setting. Different localities can offer a menu of public goods, with each individual choosing the menu that is best for her or him. The Tiebout model underlies the arguments for local control of securities regulation (Romano, 1998), antitrust (Easterbrook and Fischel, 1991), and environmental policy (Revesz, 2000). These papers also claim that the benefits of competition among local agencies mean that there is (or should be) no race for the bottom.

The evidence on competition among regulators is limited and often anecdotal. For example, local control of environmental regulation is deemed to be good because under this system we have seen environmental standards rising recently. There are, however, several more rigorous studies of differences of competition among regulators that focus on state corporate governance rules. When firms switch the state in which they are incorporated, stock prices show no significant reaction or increase slightly suggesting that the ability to switch regulators may have benefited firms (Bradley and Schipani, 1989; Romano, 1985). On the other hand, when states passed laws making it easier for firms to avoid hostile takeovers, stock prices fell suggesting a race for the bottom (Alexander *et. al.*, 1997; Karpoff and Malatesta, 1989). The common factor in these studies is that states seem to be acting to benefit those who are likely to decide where firms are chartered, that is, the firms' managers. Whether this is good or bad for the public depends on the degree of manager-shareholder agency problems. One contribution of this study is that we are able to test for both regulatory behavior and manager-shareholder agency problems at the same time.

An additional complication in banking is that a bank regulatory agency is essentially a collection of examiners. Unlike regulators in many other areas, examiners in banking frequently

make subjective decisions about the banks they visit.[2] Berger, *et. al.* (2000) reviews the discretion that examiners and regulatory agencies have when deciding how much risk to allow a bank. Examiners go in a bank to evaluate its risk. Based on this assessment, the examiners decide whether the bank's reserve for loan losses is sufficient and they assign a strength rating to the bank (the CAMELS rating). If a bank wants to change its portfolio, its examiner must decide how to react. The examiner can accede or make the change costly for the bank by requesting a higher loan loss reserve (resulting in a charge against income) or by giving the bank a lower CAMELS rating (resulting in more regulatory costs for the bank). [3]

Examiners can exploit the discretion they have when examining a bank to maximize their own utilities. One interest of some examiners may be to lead a "quiet life."[4] That is, they may want to get by with as little work, and as little career risk, as possible. If a quiet life were the goal, then examiners would want banks to avoid changing. The more a bank changes its portfolio, the more work an examiner would have to do. This study is the first to test whether there is evidence that examiners act so as to lead a quiet life.

There is another reason why examiners may put up roadblocks to change by banks. Regulatory behavior also may be influenced by a desire to avoid criticism from groups other than the firms they regulate.[5] Importantly, Congress and public interest groups may criticize *ex post* even actions that were proper *ex ante* (as Kane, 1989, argues was done early in the savings and loan crisis in the 1980s). This gives regulatory agencies, and by extension examiners, an incentive to avoid actions that the regulator thinks could increase the risk of bank failure. Fear of criticism may induce risk aversion on the part of regulators.

One goal of this paper is to test whether there is evidence in regulatory decisions of Tiebout sorting, a race for the bottom, a desire for the quiet life, or risk aversion. As a secondary goal, we attempt to shed light on other possible motivations for regulatory and bank actions, including manager-shareholder conflicts. The evidence here is consistent with both Tiebout sorting and the quiet life hypothesis, and there is evidence against all the alternative explanations of regulatory behavior. We find that banks that switch regulators do better after the switch. There is some

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[2] In other industries, interpretation of regulations most frequently comes at the agency level. There is a literature that looks at whether regulatory agencies act as Congress wants them to. Libecap (1996) contains a number of articles addressing this question.

[3] Evidence of the power examiners hold over banks is mostly indirect. For example, in 1991 Alan Greenspan was worried that examiners were contributing to a "credit crunch" by requiring banks to hold to much capital against loans. He felt that examiners were using their discretion to be too tough on banks.

[4] Berger and Hannan (1998) talk about the desire by bankers for a quiet life.

[5] Stigler (1971) points out that regulators can be captured by the industries they regulate because firms in the industry care a lot more about the regulators decisions than outsiders. Peltzman (1976) and others extend Stigler's argument by pointing out that any organized interest group can have an influence on policy.

evidence that the regulator they switch to is based on the types of changes they are making in their portfolio. Also, holding everything else constant, banks are more likely to switch regulators when the banks are changing their portfolios – thus generating more work for examiners.

The paper consists of six sections. The first section sets out the major hypotheses and data sources. In the next section, we look at the probability that a bank changes its primary regulator as a function of bank characteristics. The third section examines the performance of banks that switch regulators. The next section focuses on the individual regulatory agencies (that is, the OCC, the Fed, and the FDIC). We examine whether any of the findings in the previous sections are specific to a single regulator. The fifth section discusses robustness. Finally, the last section offers concluding comments.

1. Hypotheses and data

To provide the underpinnings for the empirical work in later sections, this section reviews the reasons why a bank might switch regulators. When bank managers are asked why they change primary regulators, they generally respond in one of two ways. They claim that the switch either saves them money (as Chase Manhattan Bank did after its merger with Chemical Bank in 1995) or allows them additional powers (as Chase did when it changed the primary regulator of its Delaware bank in 1990).

If regulatory switches are primarily designed to save money, then banks should have no (expected) change in their risk profile surrounding a switch. Looking at performance, the only impact of the move should be an increase in return. The direct cost of regulation is small, generally less than $4 per $10,000 of assets. However, it is difficult to pin down how big the savings could be, since estimates of the total cost of regulation, including indirect costs, vary widely. Elliehausen (1998) gives estimates of the cost of regulation that range between 5 and 15 percent of noninterest expense, or between 2 and 6 percentage points of return on equity. So, if the differences across regulators are large, it can have a measurable effect on a bank's bottom line. If banks are motivated primarily by cost savings, then there should be little other change in their portfolios:

> H0 (cost savings): Banks increase return when they switch primary federal regulators (so that return rises or risk falls). The switch is not associated with a change in loan portfolios or in measures of risk.

We use this as the null hypothesis in this study. The implications of this and the alternative hypotheses described below are summarized in Table 1.

Public interest – Tiebout sorting

Banks may choose regulators based on the basket of services provided by each regulatory agency and its examiners. Consistent with the Tiebout hypothesis, a bank may change regulators when its desires a different set of services, such as when it is otherwise changing its business strategy.

Some regulations differ across agencies, although these differences generally are minor.[6] But for some banks, and some issues, the differences might be important enough to induce a switch. During the sample period, for example, the insurance powers allowed to banks differed across regulators. If banks shift to a new regulator to take advantage of a new, profitable activity, then return should increase (or, more exactly, the bank should shift to a better risk-return tradeoff).

Switching to a new regulatory agency may be part of a general shift in a bank's portfolio. According to the Tiebout model, regulators choose a package of regulations and examination policy to offer banks. Banks choose the package that most closely fits their objectives. If regulators specialize, then there may be a pattern in the switching data reflecting the policies of the regulatory agencies. For example, banks that focus on a particular kind of loan may prefer one regulator while banks that want low examination costs may prefer another. If banks, in an attempt to provide shareholder value, sort themselves this way, then the following hypothesis should hold:

> H1 (Tiebout sorting): Banks shift to a more favorable risk-return tradeoff when they switch primary federal regulators (so that return rises or risk falls). The changes in risk, return, and other portfolio characteristics may differ depending on the regulatory agencies involved in the switch.

We expect other changes in a bank's portfolio to occur around the time of the switch of regulators.

Race for the bottom

If regulatory agencies want to maximize their budgets or their domain, then they will compete for firms. A race for the bottom occurs when this competition is at the expense of the public interest. One job of the bank regulatory agencies is to protect the safety and soundness of the banking system by preventing banks from taking excessive risk. Given this, one way the agencies can compete for banks by being less stringent about safety and soundness. This is the "competition for laxity" that Federal Reserve Chairman Arthur Burns spoke about in 1974.[7] His worry was that agencies would try to attract banks by letting the banks take more risk without a

[6] Butler and Macey (1988) point out that one reason for the small differences across regulators in our sample is the use of federal supremacy laws. In essence, federal regulators impose their rules on state-chartered banks through direct regulation or by making federal deposit insurance conditional on accepting certain rules.

[7] Scott (1977) reviews of the statements of Chairman Burns and others on this topic.

compensating increase in return. This is not in the public interest because it increases the risk of bank failures, and hence the expected payments to insured depositors by the FDIC. We capture this in the data by looking for banks that increase risk without increasing return after switching regulators:

> H2 (race for the bottom): Banks switch regulatory agencies to increase risk. Return does not increase after the switch.

H2 implicitly assumes that all regulatory agencies are competing for laxity. If the competition is limited to one or two agencies, then it might not show up in the aggregate data. In Section 4, we examine whether individual agencies are allowing risk taking to increase the number of banks they regulate.

Quiet life

Another alternative hypothesis is that bank examiners want a quiet life. Examiners have a quiet life when the banks they regulate change as little as possible. Since we want to distinguish an examiner acting in her own private interest from one acting in the public interest, we look for examples where banks are impeded in their attempts to make value-adding changes. So, as an alternative hypothesis we have[8]:

> H3 (quiet life): A bank is more likely to switch regulatory agencies when it is changing its portfolio. These changes may involve increasing or decreasing risk. After changing agencies, the bank has higher return (or lower risk with the same return).

The changes in portfolio we examine include changes in leverage and other measures of risk, as well as changes in the loan portfolio without regard to whether they change risk. The less a bank changes, the happier the examiner is, and the less pressure she puts on the bank. Thus, 'quiet' banks – those that have little change their loan portfolios and risk – should be less likely to switch regulators than their more active counterparts. If risk is increasing concurrent with a switch, then this supports both the race for the bottom and the quiet life. To support the quiet life against a race for the bottom, we look for switches based on decreases in risk such as leverage or based on changes in the loan portfolio once risk is controlled for. Both the quiet life and Tiebout sorting imply that banks shift to a better risk-return tradeoff and change their portfolios when switching regulators. To distinguish between these hypotheses, we examine the portfolio changes of banks as a function of the agency they switch to.

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[8] We do not have data on whether banks are granted changes of examiners within an agency. Thus, we may not be able to pick up some instances when an examiner is changed because she impedes changes in a bank's portfolio.

Risk aversion

The final hypothesis about regulatory behavior that we test is risk aversion. If agencies or examiners are risk averse, then they will prevent banks from making value-adding increases in risk:

> H4 (risk aversion): A bank is more likely to switch regulatory agencies when it is increasing (failure) risk. After changing agencies, the bank has higher return.

The distinguishing characteristic between risk aversion and a race for the bottom is the return after the switch. If agency or examiner risk aversion is the driving force behind a switch then return should increase, while if a race for the bottom exists then return should decrease.

Managerial explanations

There is another agency conflict in banking – the one between bank managers and shareholders. If bank managers are acting in shareholders' interests, then any increase in a bank's risk should be accompanied by an increase in return. On the other hand, the increase in risk could reflect a bank manager's reaction to changes in the bank's market. Gorton and Rosen (1995) show that during the 1980s, banking was in a period of decline. They also note that if the bank managers most affected by the decline continued their existing approach, return at their banks would fall increasing the chance that the managers would be fired. On the other hand, the managers knew more about the risks they were taking than outsiders, including outside shareholders. If the managers increased risk, even at the expense of expected return, they might get high enough realized returns to keep their jobs.[9] The key was that outsiders did not realize that the bank was moving to a worse risk-return tradeoff. Since the same examiners visit a bank repeatedly, the current examiner of a bank may know more about the bank's risk than either an outsider or a new examiner. Thus, switching regulatory agencies gives the bank a new examiner who may have difficulty determining both the level of risk at the bank and whether the risk is compensated by a higher expected return. So, a finding that banks increased risk but not return may reflect the manager-shareholder conflict rather than any problems with regulators[10]:

> H5 (managerial risk taking): Banks switch regulators concurrent with adding risk. Performance does not improve after the change.

It is difficult to distinguish managerial risk taking from a race to the bottom if we find an increase in risk at the same time as a switch. However, if we assume that banking was in decline in the early part of our sample but not the later part of the sample, we can look at whether H5 holds

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[9] Because banking was in decline, the normal incentive for managers to reduce risk (Amihud and Lev, 1981) was reversed.

[10] Bank managers also might increase risk to "gamble for resurrection." That is, they may take risks that reduce the expected return on their asset portfolio but increase the expected return to shareholders by taking advantage of fixed-rate deposit insurance. Regulators should prevent this. If they do not, we should pick it up as a race for the bottom.

early but not late. This could either reflect a race to the bottom in only one part of the sample or managerial risk taking.

The manager-shareholder conflict may also manifest itself in scapegoating. When a bank manager does poorly, he may want to shift blame from his performance to external circumstances. One way to do this is to blame the examiner. Thus, we might see banks switching agencies after poor performance. This need not be accompanied by a change in the bank's portfolio. If the regulator really is at fault, then performance should increase after a switch while if it is scapegoating, then there should be no improvement:

> H6 (scapegoating): Banks are more likely to switch regulators after poor performance. Performance does not improve after the change.

Data

To test these hypotheses, we focus on banks that changed primary regulatory agencies between 1983 and 1999. Banks have been switching agencies for many years (Scott, 1977, documents switches from 1950 to 1974). However, our sample starts after the passage of the Depository Institutions Deregulation and Monetary Control Act (DIDMCA) in 1980. Prior to DIDMCA, there were important differences across regulators. For example, reserve requirements depended on whether a bank was a member of the Federal Reserve System. DIDMCA leveled the playing field for banks that were and were not members of the Federal Reserve System. It is possible that many of the regulatory switches that occurred prior to and immediately after passage of DIDMCA were related to major differences in regulations rather than the implementation of the regulations.

Table 2 gives an overview of the banks that switched primary regulators. As the second column of Panel A shows, there were 1,522 changes during the sample period, an average of 90 per year. Over the sample period, 9.4% of banks left their regulator at least once (0.7% of banks switched more than once). Both the number of banks and the proportion of banks that switched regulators increased in the 1990s. Panel A also gives a breakdown of switches by the size of the bank. The smallest banks were the least likely to switch.

Panel B in Table 2 looks at the direction of regulatory changes. Most regulatory switchers were either moving to or away from primary federal regulation by the FDIC (state nonmember status). This is not surprising, since the FDIC regulates sixty percent of banks. Relative to a situation where switches had been in proportion to the share of banks regulated by each agency, the Fed was the biggest gainer and the OCC the biggest loser. There were a net of 303 switches to the Fed and 300 away from the OCC compared to proportional changes.

Balance sheet and income data for banks comes from the year-end Call Reports of Income and Condition (Call Reports) that banks are required to file. Table 3 gives data on the variables

used in the paper.[11] We measure return using return on equity (ROE) and risk using three measures: the equity-to-assets ratio, the loan-to assets ratio, and the ratio of nonperforming loans to total loans. The equity-to-asset ratio is a measure of leverage, with higher values indicating lower risk. Loans are riskier than most other (on-balance sheet) bank assets, so we interpret an increase in the loan-to-asset ratio as an indicator of higher risk. The nonperforming loans-to-loans ratio reflects expected losses on loans made in the past. A riskier loan portfolio, all else equal, has higher nonperforming loans. Since nonperforming loans can also reflect bad luck or bad management, results based on an analysis of nonperforming loans should be viewed with caution.

We can also view the loan-to-assets ratio and the nonperforming loans-to-loans ratio as proxies for the workload of bank examiners. Examiners have to spend more effort reviewing loans than other assets and nonperforming loans than other loans. If examiners desire a quiet life, then they would prefer banks to have nonloan assets such as cash and government securities and they would like the banks not to issue loans with a high probability of becoming nonperforming.

2. Why banks change regulators

This section examines the characteristics that predict whether banks switch primary regulators. To do this, we must control for other reasons that banks might switch primary regulators. For example, we expect that banks are more likely to switch regulators after a major corporate change such as a merger or when they belong to a holding company that has banks with different primary regulators.

The model used to predict switches is:

(1) Regulator Change = f(Bank Risk Change, Bank Portfolio Change, Control Variables),

where Regulator Change is one if the bank changes regulator in year t and zero otherwise. The independent variables are described below and summarized in Table 3.

Bank risk change

We measure the change in risk two ways. First, we include the difference in the primary risk ratios at the end of year t from their value at the end of year t - 2. Notice that we include changes in year t, the year of any potential regulatory shift. We do this for two reasons: First, we do not have an exact date for a switch. Also, we are much more concerned with changes in the policy of a bank that the bank examiner can see. It takes time to implement such changes, but it is likely

[11] We drop all banks that switch regulators more than once in the sample period. We also eliminate outliers from the sample by dropping any observation where the ROE, ROA, or equity-to-assets ratio is either in the top 1% or bottom 1% of values. These do not affect the qualitative results.

that a bank (and its examiners) know months in advance that the bank is adding risk that might be reflected in these ratios. Thus, while some of the change may occur after any switch, most of the planning for the change takes place prior to the switch.

Estimating changes in risk ratios using continuous variables may be misleading. Banks may run in to resistance from a regulatory agency or an examiner not as a function of how big a change in risk they make but if the change in risk exceeds some threshold level. To capture the possibility of a discrete change in regulatory behavior when risk at a bank increases beyond a threshold, we include dummy variables that have the value one if a bank's risk increase is in the top quartile of changes at all banks and dummy variables that have the value one if a bank's risk increase is in the bottom quartile of changes at all banks.

Bank portfolio change

We look at bank portfolio change by looking at shifts within a loan portfolio. We split the loan portfolio into seven categories: real estate construction loans, commercial real estate loans, home mortgage loans, other real estate loans, commercial and industrial loans, consumer loans, and other loans. For each of these, we measure the percentage change in that category of loan as a fraction of total loans between the ends of year t – 2 and year t.

We measure loan portfolio change as the sum of the absolute values of the percentage changes in each type of loan:

$$\text{Loan portfolio change} = \Sigma \mid \text{change in loan type i between years t-2 and t} \mid,$$

where the sum is taken over all seven different types of loans. Higher values of loan portfolio change should make it more difficult for a bank examiner to have a quiet life. We include both the continuous version of loan portfolio change as well as dummy variables for whether the change is in the top quartile or the bottom quartile.

Control variables

The primary hypothesis that we are testing in this section is that banks change regulators when they are adding risk or otherwise changing their portfolio. To control for a bank's existing levels of risk and return, we include the equity-to-assets ratio, the loan-to-assets ratio, the nonperforming loans-to-loans ratio, and ROE (adding additional risk and return variables as controls does not change the qualitative results). We use the log of total assets as a control, since larger banks are more diversified, all else equal. We also include the log of total assets squared, since Table 2 suggests a quadratic relationship between assets and switches. All these variables are as of the end of year t – 1 except ROE, which is for the entire year t – 1.

We also want to control for other reasons unrelated to risk, return, and portfolio change that

may lead a bank to shift its primary regulator. Additional controls include a dummy for merger activity. The dummy has a value of one if the bank or its holding company has been involved in a merger with a banking organization in year t or year t-1. Breaking down mergers by type, such as mergers between banks within a holding company versus acquisitions of outside banks, does not change the qualitative results. We also control for holding company status using dummies for whether the bank is the lead bank in a holding company, or whether it is a non-lead bank within a holding company that has the same or a different charter than the lead bank (banks not in a holding company are the excluded category). This allows us to test for switches to unify the regulators a holding company reports to. The holding company status variables are all as of the end of year t - 1.

There may also be other differences across primary regulators. To control for this, we include dummies for whether a bank is regulated by the Federal Reserve or the FDIC at the end of year t - 1 (the OCC is the omitted category). In Section 4, we examine in more detail the extent to which the pattern of changes depends on the regulators.

Finally, year dummies are included to control for systemic changes such as changes in the banking economy.

Results

Table 4 presents the results of a logistic regression of (1).[12] The first column shows that the control variables are important predictors of regulatory switches. Banks are more likely to switch if they have merged, are within a holding company (especially if they are not the lead bank), are performing poorly, or are larger. These results are consistent with banks changing agencies as the result of corporate reorganization or to simplify their regulation. One slightly puzzling result is that a bank is more likely to switch when it is not the lead bank in a holding company if it has the same charter as the lead bank. This may reflect the use of special purpose non-lead banks to exploit the differences in regulation. There is also a pattern across the regulators with banks at the Fed and FDIC more likely to switch than those at the OCC. We explore this further in Section 4.

The second column of Table 4 includes the continuous measures of changes in risk, return, and loan portfolios. Under the null hypothesis, the coefficients on these variables should all be insignificantly different from zero. As shown in the table, the only change variable with a significant coefficient is the loan portfolio change. The coefficient on the loan portfolio change variable is significantly positive. This suggests that once risk is controlled for, changes in the

[12] As a robustness check, we rerun all the logistic regressions using a fixed effect OLS model. The results are qualitatively similar.

loan portfolio make a switch of regulators more likely. As shown in Table 1, this is consistent with the quiet life hypothesis.

The third column of Table 4 introduces the quartile dummies for the main risk, return, and portfolio change measures. The dummies do a better job of explaining regulatory switches than the continuous variables do.[13] For this reason, we focus on the model without the continuous risk and portfolio change variables. Changing the risk ratios either up or down increases the chances of switching regulators. This provides support for the quiet life hypothesis since it is the fact that a bank is changing and not the direction that is important. Further support is provided by the loan portfolio change variables. 'Quiet' banks – those in the bottom quartile in loan changes – are less likely than average to switch regulatory agencies while 'active' banks – those in the top quartile in loan changes – are more likely to switch. None of the coefficients on the quartile dummies for the individual loan shares is significant, suggesting that again it is the act of changing rather than the types of changes made that is key.

We also include changes in return in the regressions in Table 4. The results imply that after controlling for other factors, banks are more likely to switch regulators when their return is increasing and not when it is decreasing. This is evidence against the scapegoating hypothesis.

In the fourth column, we add dummies for the growth in individual loan shares. We include dummies that are one if a bank's increase in the proportion of loans of a given type was in the top 25 percent. None of the coefficients on the loan share dummies is statistically significant. We return to this in Section 4, when we examine the individual regulatory agencies.

Much of the explanatory power in the regressions comes from the merger variable and the holding company structure variables. This is consistent with many switches being motivated by organizational issues within banks. For example, multibank holding companies may want to simplify regulation under a single agency or the acquiring bank in a merger may want to take the charter of its target. We would like to eliminate switches motivated by changes in corporate structure to see if other banks that switch appear to be reacting to regulatory actions. To do this, we rerun the predictive model (1) for non-holding companies banks and one-bank holding companies excluding those banks that had recently merged. The results, presented in the fifth column of Table 4, are qualitatively similar to those for the full sample. The biggest difference is that the coefficients on the equity-to-asset ratio change variables, although positive, are insignificant in the smaller sample.

[13] When both the discrete and continuous versions of the risk and portfolio change variables are included, only the discrete versions are statistically significant.

Overall, the results provide support for the quiet life hypothesis against the null hypothesis that bank switch *only* to save on costs. Since banks are more likely to switch when they increase risk, can we also interpret the results as supporting risk aversion on the part of regulators? While we cannot reject risk aversion playing a role, if risk aversion is the driving factor in regulatory decisions, then a large reduction in the risk ratios should reduce the probability of a switch instead of increase it as the data suggest.

3. The performance of banks that switch primary regulators

This section looks at the pre- and post-switch performance of banks. In the previous section, we show that a bank is more likely to change its primary regulatory agency when it is changing its portfolio. This is consistent with the first part of the quiet life hypothesis. However, we have not yet examined the second part of the hypothesis, which says that regulators impede value-adding portfolio changes. For this, we need to look at whether banks performance improves after a switch of regulators. Looking at performance around a switch also sheds light on Tiebout sorting, the race for the bottom, and the risk aversion hypotheses.

Return is higher in the year following a change of regulators than in the year prior to a change of regulators. Return on equity rises from 9.98% to 11.43%, an increase of 14.5%. This is both statistically and economically significant. The risk measures are mixed, with the equity-to-assets and loan-to-assets ratios rising by less than 3% each but the nonperforming-loans-to-loans ratio falling. A large increase in return with at most a small change in risk is evidence that bank performance improves after a regulatory switch. But these performance changes may not be the result of the switch. To control for other factors that can explain return and risk, we use the following model:

(2) Performance = f(Pre-change indicators, Post-change indicators, Control Variables),

where the model is estimated for the two return and three risk variables over the entire sample. We use the same control variables as we did in the regressions to predict regulatory switches, except we omit return variables for the return regressions and some risk variables for the risk regressions. We also add one variable, the absolute value of the loan portfolio change. The results are robust to the omission of this variable, but we believe it might be a proxy for costs involved in altering bank policy.

The results in the previous section were consistent with the quiet life hypothesis. If return is increasing and risk changing (either up or down), then this would provide further support for the hypothesis. As shown in Table 1, Tiebout sorting is also consistent with a move to a better risk-

return tradeoff. However, a race for the bottom, risk aversion, and managerial risk-taking all predict an increase in risk after the switch. If either the race for the bottom and managerial risk-taking, but not risk aversion, hold, return should fall after a switch.

A priori, we have no reason to believe that the changes induced by a switch of regulators should be immediately reflected in performance. For this reason, we look over a variety of time horizons surrounding a regulatory change. In Table 5, we present results that focus on two and five year periods before and after a switch. This allows a long enough time before a switch to see whether there was some change in a bank's performance that might prompt a switch. It also allows a long enough time after a switch to ensure that all the changes that result from it are reflected in the accounting data we examine. For banks that switch regulators, we use dummy variables for pre- and post-switch periods and well as a trend variable for the longer horizon (specific definitions are given in the table). As seen in the table, return increases after a switch. Although trend in return is positive going into a switch, it increases significantly following a switch. Most of the change in return occurs at least two years after the switch. The results also indicate that the equity-to-assets ratio weakly falls following a switch, the loan-to-asset ratio increases, and the nonperforming-loans-to-loans ratio decreases. These results are robust to changes in the five-year horizon, but the two years before and after a switch seem to be different than other years. The generally flat performance in the two years after a switch may reflect the time necessary for changes initiated after the switch to show up in the accounting data.

The increase in return post-switch is consistent with Tiebout sorting and the quiet life hypothesis. It is inconsistent with a race for the bottom, managerial risk taking, or scapegoating. The decline in the nonperforming loans-to-loans ratio with a roughly steady equity-to-assets ratio implies that the expected failure rate of banks that switch is no higher, and probably lower, after a switch compared with before. This is inconsistent with the new regulatory agency allowing a bank that has switched to take socially excessive risk, and thus inconsistent with agencies being engaged in a race for the bottom. To the extent examiners are risk averse, we assume that they want to avoid the failure of banks they regulate. Thus, although banks weakly increase risky assets after they switch, since the risk of failure appears to fall, the results are also inconsistent with examiners being risk averse.

Overall, the results are consistent with the quiet life hypothesis since changes in risk – in either direction – or changes in the loan portfolio are associated with a higher probability of switching regulators and since return is increasing after a switch. The increase in return also is consistent with Tiebout sorting, which implies that firms switch as part of a process that improves performance. We attempt to distinguish the quiet life from Tiebout in the next section.

The results are not inconsistent with the risk aversion hypothesis explaining some switches, since an increase in risk leads to more switches and return increases after a switch. However, switches are also more likely when risk is decreasing a lot, and that should not happen if risk aversion is the only reason to switch. A race for the bottom implies that banks are no better off after a switch, but we find that return is increasing after a switch at the same time as failure risk is not increasing. Increasing return and weakly decreasing risk also rules out the two managerial explanations for switches since managerial risk-taking should lead to an increase in risk and scapegoating is not associated with higher return.

4. Individual regulatory agencies

The purpose of this section is to provide tests of Tiebout sorting and to determine if some of the other hypotheses hold at one or two, but not all, the regulatory agencies. Tiebout sorting implies that the three bank regulatory agencies specialize in their manner of regulation. Banks can choose the agency that best met their needs. Prompting for specialization may derive from the fact that the three bank regulatory agencies have very different responsibilities and positions within the government. These responsibilities and relationships may affect the way the agencies regulate banks. The OCC is part of the Treasury Department, and thus is under the President. The Fed is an independent agency that also has the responsibility for monetary policy. Its attitude toward regulation might be colored by the importance of controlling inflation. The FDIC is also an independent agency. It supervises the deposit insurance fund, and that may influence its attitude toward bank failures.

The Tiebout sorting hypothesis implies that there should be clear differences in the types of banks that switch to each regulator. To test this, we examine a predictive model focusing on the regulator that is being switched to. That is, for each regulatory, we use the predictive model (1) to examine the probability that a bank not regulated by that agency at the end of year t – 1 switches to the agency during year t.[14]

Table 6 presents evidence on the probability that a bank switches to a particular regulator. The coefficients are generally consistent with the full sample results for all three regulators, with the exception of the loan share variables. The loan share variables indicate that regulators seem to specialize in different loan categories. Banks that are increasing consumer loans are more

[14] For robustness, we ran a multinomial logistic model asking which regulator a bank would have in year t given its regulator in year t – 1. The results are consistent with the results here, although fewer variables are statistically significant because the multinomial logit in effect splits the sample into smaller subsamples. Moreover, it is more difficult to look at the regulator that is being switched to since you have to combine the results of two multinomial regressions (for banks switching from each of the other two regulators).

likely to shift to the OCC, banks that are increasing commercial loans (including commercial real estate loans) are more likely to shift to the Federal Reserve, and banks that are increasing real estate construction loans are more likely to shift to the FDIC. This is consistent with the loan shares held by all banks (not shown). Controlling for size and holding company structure, banks at the OCC hold more consumer loans, banks at the Federal Reserve more commercial loans (overall, but not more commercial real estate loans), and banks at the FDIC more real estate construction loans. This provides support for Tiebout sorting.

The results of the predictive model do not support a conclusion that one regulator is attracting primarily weak banks. The coefficient on the dummy indicating an increase in return is positive at all three agencies, although only statistically significant for banks switching to the FDIC. However, the other two agencies attract banks that have a statistically significantly higher probability of being banks with declining nonperforming loans.

The evidence implies that regulators are specializing, but that does not show that specialization is in the public interest. To test that, we need to examine the change in performance after a switch. As in the previous section, we look at the pre- and post-switch performance of banks that switch regulators controlling for other factors that could influence performance. We start with (2), the same model as in Section 3, but we include interaction variables between the pre- and post-switch variables and the regulator at the end of year t – 1 (the conclusions are the same when we interact the variables with the regulator at the end of year t). Table 7 presents the results for the interaction variables. As an example of how to interpret the table, the variable for the trend prior to the switch for banks from the OCC is the pre-switch trend variable multiplied by a dummy that is one for banks that switch from the OCC in year t. The positive coefficient on that variable indicates that – controlling for mergers, holding company status, size, and risk – banks that left the OCC in year t were increasing ROE prior to switching. Overall, the results in Table 7 show that for banks that switch from all three agencies, return rises or risk falls. This suggests that banks are shifting to a better risk-return tradeoff when they switch. This provides further support for Tiebout sorting.

We can also use the results in Table 7 to shed light on some of the other hypothesis. The race for the bottom, managerial risk-taking, and scapegoating require a worse risk-return tradeoff after a switch while the race for the bottom, risk aversion, and managerial risk-taking all imply an increase in post-switch risk. Banks leaving the OCC are increasing return without increasing risk, providing no support to any of the hypotheses. Banks leaving the Fed have higher leverage (a lower equity-to-assets ratio) but lower nonperforming loans. Since banks that leave the Fed also increase return, it is unlikely that they significantly increase failure risk. The return at banks leaving the FDIC is economically and statistically no different after they switch than before.

These banks increase their loans-to-assets ratio, but experience a decline in their nonperforming loans-to-loans ratio after they switch. On average, the ratio of nonperforming loans to assets (not shown) declines slightly after a switch (the increase in loans is slower than the decrease in bad loans). This means that it is unlikely failure risk rises. Thus, overall, the performance evidence does not support a race for the bottom, risk aversion, managerial risk-taking, or scapegoating being the major reason why banks switch agencies.

To examine whether examiners at only one or two regulatory agencies desire a quiet life and whether only one or two agencies are risk averse, we look at the probability that banks regulated by a particular agency at the end of year t – 1 switch to a new agency in year t. These results are presented in Table 8. For the OCC and the FDIC, the coefficients on the loan portfolio change dummies have the same sign as in the full sample. This supports the quiet life hypothesis at these two agencies. Quiet banks regulated by the Federal Reserve are less likely to switch, as in the full sample, but active banks are no more likely to switch than banks in the middle. The difference between quiet banks and all others is consistent with the quiet life hypothesis, while the result on active banks does not contradict it.

As in the aggregate data, there is evidence that increases in risk might be associated with switching from the FDIC and the Fed, but there is also evidence that there are other factors, including reductions in risk, that increase the probability that a bank switches from each agency. For example, banks with increasing leverage or nonperforming loans are more likely to switch from the FDIC, but so are banks with decreasing leverage or nonperforming loans. This suggests that risk aversion is not the major reason that banks switch regulators.

To summarize, there is evidence of specialization among agencies prompting some switches, supporting Tiebout sorting. It also appears that examiners at all the agencies seem to desire a quiet life. At least some evidence against all of the other hypotheses exists at each agency since the risk-return tradeoff is improving while failure risk is not rising at any agency. This suggests that the dominant reasons for banks to switch regulators are to take advantage of Tiebout sorting, to avoid an examiner who wants a quiet life, or for reasons unrelated to regulation (such as to consolidate after a merger).

5. Robustness

In this section, we present the results of several robustness checks. They support the results in the previous sections. To save space, only the qualitative results for the robustness tests are given.

Since some switches are motivated reasons other than the actions of regulators, in Section 2

we looked at the subsample of banks that have not merged and either are not in a holding company or are the only bank in a holding company. However, this may not eliminate all the switches done for structural reasons. To drop those most likely to switch for structural reasons, we use the first regression in Table 4 to predict how likely a bank is to switch regulators. This model does not include any performance or loan variables meaning that it isolates structural reasons for switching. We drop from the sample banks in the top ten percent of probability of switching regulators based on these predicted values (recall that about one percent of banks switch regulators every year). We rerun our tests on the remaining 90 percent of banks. The qualitative results are as in the previous sections. This is more evidence that while organizational issues may be important, they are not driving the overall results.

If prior performance affects the probability of switching, as the results suggest, then it may also affect the post-switching performance. For example, the scapegoating hypothesis implies that banks blame declines in performance on regulators. One reason that we might not see this in aggregate data is that most banks had strong performance leading into a switch. We divide banks by whether return increased from year t-2 to year t and by whether nonperforming loans fell from year t-2 to year t. We then examine whether performance improves post-switch. These results must be interpreted with extreme caution, since we are in some sense conditioning on what we are looking to find. Nonetheless, the results are consistent with the effect of a switch being independent of prior performance. In no case are the signs of the coefficients significantly different between the banks with strong and weak prior performance.

The bank failure rate rose throughout the 1980s and remained high in the early 1990s. On the other hand, banks made record profits in the late 1990s. This suggests that banking may have gone through two regimes in the sample period. First, a period of decline as identified by Gorton and Rosen (1995) and then a period of strength. To examine whether behavior changed, we split the sample into two subperiods: 1983-1990 and 1991-1999. The break in the sample is between 1990 and 1991 because the number of bank failures started falling in 1991. The results of the predictive model (1) are similar for the two subperiods. But there is evidence that in the early part of the sample, return and leverage both declined in the two years following a change of regulators. The decline in return is consistent with managerial risk taking as a reason for switching regulators, but the decline in leverage is not.

This paper focuses on changes of primary federal regulators. There are two potential objections to this. First, it may be the choice of a national versus a state charter that matters, and not the further choice of whether to be a Federal Reserve System member. Using a switch of charters rather than a switch of primary federal regulators in our analysis does not change the qualitative results. A second issue is that for state-chartered banks, regulation is shared between

federal regulators and state regulators. To control for the effect of state regulators, we add state dummies for banks with a state charter. The qualitative results in the predictive regression are unchanged. We also examined results on a state-by-state basis, but even for the largest states, there were not enough switches to get meaningful results.

6. Concluding comments

This paper attempts to shed some light on the motivations of regulators. This is important both for its implications in banking and for its contributions to the debate on the optimal regulatory structure. The debate over whether regulatory authority should be centralized or divided among different agencies has been long and heated, but there has been little direct empirical evidence brought to bear. By examining switches of primary federal regulators by banks, we are able to test the importance of different theories of regulation. We test whether there is beneficial specialization by agencies, whether the agencies race for the bottom or are risk averse, and whether examiners want a quiet life. Our results strongly support a combination of beneficial specialization, that is, Tiebout sorting, and the quiet life hypothesis against the other two. Banks are more likely to switch regulators when they are changing risk and loan portfolios, whether or not these changes increase risk. Moreover, these changes appear to improve performance. When we look at individual bank regulators, there is support for Tiebout sorting and the quiet life hypothesis at all three regulators – the OCC, the Federal Reserve, and the FDIC.

Periodically, questions are raised about whether bank regulatory authority should be consolidated into one agency. For example, the following is from an article in *Business Week* on April 21, 1975:

> Take a banking system governed by three federal and 50 state regulatory agencies that compete more often than they cooperate. Mix in three massive bank failures in less than 18 months, and add a charged-up liberal Congress that includes militant, new chairmen for both the House and Senate banking committees. The result is more turmoil in the field of bank supervision than at any time since the 1930s, with the regulatory agencies jockeying for top position and with Congress threatening to write new rules of its own.

This paper suggests two possible benefits of the regulatory structure we now have. Bank regulators seem to specialize, allowing banks to pick the regulator that best matches their strategy. This regulatory specialization allows banks to move to a better risk-return tradeoff by switching regulators when they are switching business strategy. Another benefit is that if bank examiners are making it difficult for banks to make value-adding changes, then banks can improve performance by switching to a new examiner at a different agency. This last benefit is above and beyond any from the competition among regulators discussed in the previous literature in this area.

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Table 1: Predictions of the main hypotheses.

	Prior to the switch	Concurrent with switch		As a result of the switch	
	Return	Risk	Loan portfolio (controlling for risk)	Risk-return tradeoff	Risk
H0: Cost savings	NP	0	0	Increasing	NP
H1: Tiebout sorting	NP	NP	NP	Increasing	NP
H2: Race for the bottom	NP	Increasing	NP	Constant or decreasing	Increasing
H3: Quiet life	NP	Not constant (increasing or decreasing)	Changing	Increasing	NP
H4: Risk aversion	NP	Increasing	NP	Increasing	Increasing
H5: Managerial risk-taking	NP	Increasing	NP	Decreasing	Increasing
H6: Scapegoating	Decreasing	Constant or increasing	NP	Constant or decreasing	NP

NP – No prediction.

Table 2: Summary statistics for banks that switch primary federal regulators, 1983-1999.

Panel A. Regulatory switches by year and size of bank.

			Total assets less than $100 million		Total assets between $100 million and $1 billion		Total assets between $1 billion and $10 billion		Total assets over $10 billion	
Year	Number of banks that change regulators	Percentage of banks that change regulators	Number of banks that change regulators	Percentage of banks that change regulators	Number of banks that change regulators	Percentage of banks that change regulators	Number of banks that change regulators	Percentage of banks that change regulators	Number of banks that change regulators	Percentage of banks that change regulators
83	63	0.44	41	0.38	16	0.51	6	1.92	0	0.00
84	70	0.49	41	0.38	25	0.77	4	1.27	0	0.00
85	78	0.55	48	0.45	29	0.89	1	0.28	0	0.00
86	78	0.56	52	0.51	20	0.60	6	1.64	0	0.00
87	78	0.58	45	0.45	31	0.97	2	0.54	0	0.00
88	78	0.60	43	0.46	33	1.06	2	0.55	0	0.00
89	64	0.51	34	0.38	26	0.84	4	1.21	0	0.00
90	64	0.53	39	0.45	22	0.72	2	0.61	1	1.61
91	72	0.62	50	0.61	18	0.59	4	1.26	0	0.00
92	105	0.93	51	0.65	38	1.23	14	4.18	2	3.28
93	124	1.14	72	0.97	39	1.29	11	3.19	2	3.23
94	101	0.99	44	0.63	49	1.70	7	2.25	1	1.59
95	154	1.58	78	1.21	62	2.15	12	3.75	2	2.78
96	83	0.89	44	0.73	34	1.18	3	1.03	2	2.94
97	111	1.25	50	0.87	51	1.81	10	3.79	0	0.00
98	119	1.39	66	1.23	49	1.73	4	1.46	0	0.00
99	80	0.96	43	0.83	33	1.16	4	1.50	0	0.00
total	1522	0.77	841	0.61	575	1.11	96	1.76	10	1.03

Panel B. By initial and final regulator.

Final regulator -> / Initial regulator	OCC	Fed	FDIC	Memo: percent regulated by the initial regulator
OCC		162 10.64%	336 22.08%	31.87%
Fed	78 5.12%		106 6.96%	8.73%
FDIC	391 25.69%	449 29.50%		59.40%

The first number in each cell is the number of banks and the second number is the fraction of all banks that switched regulators.

Table 3. Summary statistics for the sample.
Total sample includes all banks (excluding outliers and banks that switch regulators more than once), 1983-1999. Regulatory switchers is a subset of the total sample that includes year t-1 data for all banks that switch regulators in year t.

	Total sample				Regulatory switchers	
	Mean	25th percentile	Median	75th percentile	Mean	Median
Return on equity (ROE)	9.53	7.33	11.51	15.26	10.51	12.73
Equity-to-assets ratio	9.14	7.20	8.47	10.32	8.49	8.00
Loans-to-assets ratio	53.90	44.49	55.33	64.47	56.86	58.18
Nonperforming loans-to-loans ratio	1.88	0.38	1.09	2.44	1.71	0.98
Change in ROE	-0.15	-3.49	-0.12	3.26	0.11	-0.03
Change in equity-to-assets ratio	-0.30	-0.70	0.10	0.80	-0.15	0.08
Change in loans-to-assets ratio	1.36	-3.67	1.12	5.98	0.95	1.23
Change in nonperforming loans-to-loans ratio	-0.07	-0.85	-0.04	0.62	-0.09	-0.03
Real total assets ($ millions)	344.49	29.23	56.77	117.72	351.86	82.42
Merger dummy	10.10		0.00		21.30	0.00
Holding company member	70.30		100.00		83.90	100.00
Lead bank in a holding company	48.00		0.00		34.70	0.00
Nonlead bank with the same regulator as its lead bank	12.70		0.00		13.10	0.00
Nonlead bank with a different regulator than its lead bank	9.60		0.00		36.10	0.00
Loan portfolio change	26.35	14.41	21.66	32.89	27.74	22.94
Real estate construction loans / total loans	3.29	0.00	1.23	4.04	4.28	2.19
Commercial real estate loans / total loans	12.20	4.25	9.79	17.46	15.28	13.42
Real estate home loans / total loans	25.09	12.95	23.04	34.80	27.33	26.19
Other real estate loans / total loans	5.97	0.93	3.34	8.62	4.89	2.62
Commercial loans / total loans	20.12	10.61	17.22	26.66	20.56	18.14
Consumer loans / total loans	19.70	10.14	16.67	25.91	18.81	15.78
Other loans / total loans	13.62	0.99	6.13	20.36	8.85	3.71

Table 4. Probability that a bank will switch regulator.
The dependent variable is a dummy variable for whether a bank changes its primary federal regulator in year t. The dummy equals one if the bank changes regulators and equals zero otherwise. The sample period is 1983-1999. Year dummies are not shown.

Parameter	Estimate	Pr > ChiSq	Estimate	Pr > ChiSq	Estimate	Pr > ChiSq	Estimate	Pr > ChiSq	Estimate	Pr > ChiSq
Merger dummy	0.670	<.001	0.651	<.001	0.624	<.001	0.628	<.001		
Lead bank in holding company	0.339	0.001	0.304	0.005	0.327	0.003	0.331	0.002	0.061	0.601
Nonlead bank with the same regulator as its lead bank	1.991	<.001	1.923	<.001	1.935	<.001	1.933	<.001		
Nonlead bank with a different regulator than its lead bank	0.769	<.001	0.755	<.001	0.766	<.001	0.766	<.001		
Federal Reserve dummy	0.503	<.001	0.422	<.001	0.437	<.001	0.438	<.001	-0.031	0.864
FDIC dummy	0.424	<.001	0.360	<.001	0.376	<.001	0.377	<.001	-0.464	<.001
Log(real total assets)	5.278	<.001	5.533	<.001	5.849	<.001	5.684	<.001	1.846	0.438
Log(real total assets) squared	-0.295	<.001	-0.314	<.001	-0.331	<.001	-0.322	<.001	-0.092	0.536
Equity-to-assets ratio			-0.375	0.005	-0.035	0.009	-0.034	0.010	-0.062	0.006
Loans-to-assets ratio			0.003	0.138	0.003	0.137	0.003	0.153	0.014	0.002
Nonperforming loans-to-loans ratio			0.027	0.018	0.019	0.130	0.021	0.107	-0.035	0.229
Return on equity			-0.001	0.100	-0.001	0.325	-0.001	0.332	0.003	0.339
Loan portfolio change			0.010	<.001						
Loan portfolio change – bottom quartile					-0.341	<.001	-0.300	0.001	-0.283	0.046
Loan portfolio change – top quartile					0.265	<.001	0.239	0.001	0.410	0.002
Change in equity-to-assets ratio			0.012	0.252						
Change in equity-to-assets ratio – bottom quartile					0.135	0.072	0.130	0.083	0.150	0.273
Change in equity-to-assets ratio – top quartile					0.197	0.007	0.197	0.008	0.127	0.337
Change in loan-to-asset ratio			0.000	0.932						
Change in loan-to-asset ratio – bottom quartile					0.193	0.014	0.193	0.014	0.306	0.038
Change in loan-to-asset ratio – top quartile					0.139	0.050	0.135	0.057	0.504	<.001

Change in nonperforming loans-to-loans ratio		-0.005	0.671					
Change in nonperforming loans-to-loans ratio – bottom quartile				0.190	0.014	0.193	0.013	0.293	0.034
Change in nonperforming loans-to-loans ratio – top quartile				0.172	0.032	0.174	0.031	0.012	0.937
Change in return on equity		0.001	0.604					
Change in return on equity – bottom quartile				-0.034	0.672	-0.035	0.667	-0.014	0.927
Change in return on equity – top quartile				0.144	0.047	0.140	0.052	0.229	0.078
Change in real estate construction loans – top quartile						0.092	0.159		
Change in commercial real estate loans – top quartile						0.076	0.273		
Change in home mortgage loans – top quartile						0.025	0.731		
Change in other real estate loans – top quartile						-0.069	0.337		
Change in commercial loans – top quartile						0.059	0.439		
Change in consumer loans – top quartile						0.082	0.251		
Observations	187485	169281		169281		169281		124407	
Regulatory switches	1226	1162		1162		1162		352	
Pseudo-R^2	0.093	0.097		0.101		0.101		0.053	

Table 5. Change in performance surrounding a switch of regulators.
Pre- and post-switch performance for banks that switch primary federal regulators. The data include the five years prior to a switch and the five years following a switch (but not the year of the switch). The dummy for years t-5 to t-1 equals one if a bank switches regulators in the next five years and zero otherwise. The other dummies are defined similarly. The trend variable for prior to the switch equals τ in year t if the bank switches regulators in year $t - \tau$ where $t - \tau$ is between one and five, and zero otherwise. The trend variable for after the switch is defined similarly. The data is from 1983-1999, with year dummies not shown. Each regression has 177,445 observations. In the bottom panel, p values for the tests are reported.

	ROE				Equity-to-asset ratio			
Parameter	Estimate	Pr > ChiSq	Estimate	Pr > ChiSq	Estimate	Pr > ChiSq	Estimate	Pr > ChiSq
Dummy for years t-5 to t-1			0.010	0.927			0.076	<.001
Dummy for years t-2 to t-1			-0.163	0.467			-0.142	<.001
Trend prior to switch (t-5 to t-1)	0.031	0.022			-0.009	<.001		
Dummy for years t+1 to t+5	-0.383	0.255	0.940	<.001	-0.033	0.560	-0.090	0.022
Dummy for years t+1 to t+2			-0.834	0.008			0.036	0.490
Trend after switch (t+1 to t+5)	0.341	0.003			-0.015	0.452		
Merger dummy	0.080	0.330	0.077	0.352	-0.064	<.001	-0.063	<.001
Lead bank in a holding company	-0.469	<.001	-0.471	<.001	-0.032	<.001	-0.032	<.001
Nonlead bank with the same regulator as its lead bank	-0.343	<.001	-0.342	<.001	0.052	<.001	0.052	<.001
Nonlead bank with a different regulator than its lead bank	-0.583	<.001	-0.584	<.001	0.165	<.001	0.167	<.001
Federal Reserve dummy	0.217	0.015	0.214	0.017	-0.074	<.001	-0.073	<.001
FDIC dummy	-0.091	0.073	-0.093	0.068	0.041	<.001	0.042	<.001
Log(real total assets)	2.800	<.001	2.769	<.001	-2.685	<.001	-2.683	<.001
Log(real total assets) squared	-0.157	<.001	-0.155	<.001	0.161	<.001	0.161	<.001
Equity-to-assets ratio	-0.255	<.001	-0.255	<.001				
Loans-to-assets ratio	-0.033	<.001	-0.033	<.001				
Nonperforming loans-to-loans ratio	-1.083	<.001	-1.083	<.001	-0.039	<.001	-0.039	<.001
Return on equity					0.006	<.001	0.006	<.001
Loan portfolio change	-0.004	0.001	-0.004	0.001	-0.004	<.001	-0.004	<.001
Adjusted R^2	0.114		0.114		0.088		0.088	
Tests for differences in:								
5-year change dummies			<.001				<.001	
2-year change dummies			0.375				0.803	
Trend variables	0.008				0.762			

Table 5 continued.

	Loan-to-asset ratio		Loan-to-asset ratio		Nonperforming loans-to-loans ratio			
Parameter	Estimate	Pr > ChiSq	Estimate	Pr > ChiSq	Estimate	Pr > ChiSq	Estimate	Pr > ChiSq
Dummy for years t-5 to t-1			-0.282	0.002			0.031	0.163
Dummy for years t-2 to t-1			0.300	0.107			0.011	0.798
Trend prior to switch (t-5 to t-1)	0.065	<.001			-0.009	<.001		
Dummy for years t+1 to t+5	0.661	0.018	0.358	0.066	-0.083	0.216	-0.138	0.003
Dummy for years t+1 to t+2			0.167	0.523			0.028	0.653
Trend after switch (t+1 to t+5)	-0.086	0.371			-0.016	0.496		
Federal Reserve dummy	-0.009	0.899	-0.011	0.883	-0.017	0.335	-0.017	0.344
Lead bank in a holding company	0.845	<.001	0.842	<.001	-0.058	<.001	-0.058	<.001
Nonlead bank with the same regulator as its lead bank	2.001	<.001	2.002	<.001	-0.246	<.001	-0.246	<.001
Nonlead bank with a different regulator than its lead bank	2.222	<.001	2.218	<.001	-0.219	<.001	-0.220	<.001
FDIC dummy	0.005	0.911	0.002	0.953	-0.026	0.010	-0.026	0.011
Merger dummy	-0.696	<.001	-0.698	<.001	-0.014	0.401	-0.013	0.417
Log(real total assets)	1.242	0.021	1.209	0.025	-0.015	0.907	-0.011	0.934
Log(real total assets) squared	-0.041	0.210	-0.039	0.231	0.000	0.967	-0.001	0.940
Equity-to-assets ratio					0.001	0.611	0.001	0.607
Loans-to-assets ratio					-0.015	<.001	0.009	<.001
Nonperforming loans-to-loans ratio	-0.343	<.001	-0.343	<.001				
Return on equity	0.003	0.002	0.003	0.002	0.009	<.001	-0.015	<.001
Loan portfolio change	0.017	<.001	0.017	<.001	-0.004	<.001	-0.004	<.001
Adjusted R^2	0.128		0.128		0.105		0.105	
Tests for differences in:								
5-year change dummies			0.037				<.001	
2-year change dummies			0.003				0.009	
Trend variables	0.119				0.778			

Table 6. Probability that a bank switches to a particular regulatory agency.
The dependent variable is a dummy variable for whether a bank changes its primary federal regulator in year t. The dummy equals one if the bank changes regulators in year t and equals zero otherwise. For each regression, the sample includes all banks regulated by the named agency at the end of year t. The sample period is 1983-1999. Year dummies are not shown.

	To the OCC		To the Fed		To the FDIC	
Parameter	Estimate	Pr > ChiSq	Estimate	Pr > ChiSq	Estimate	Pr > ChiSq
Merger dummy	0.804	<.001	0.709	<.001	0.305	0.042
Lead bank in a holding company	-0.229	0.307	0.453	0.007	0.515	0.007
Nonlead bank with the same regulator as its lead bank	2.736	<.001	1.567	<.001	1.459	<.001
Nonlead bank with a different regulator than its lead bank	-0.683	0.034	0.954	<.001	1.509	<.001
Log(real total assets)	9.732	<.001	4.689	0.001	0.984	0.616
Log(real total assets) squared	-0.523	<.001	-0.259	0.002	-0.089	0.454
Equity-to-assets ratio	-0.117	<.001	-0.005	0.768	-0.019	0.389
Loans-to-assets ratio	-0.003	0.421	0.006	0.078	0.005	0.267
Nonperforming loans-to-loans ratio	-0.013	0.592	-0.053	0.143	0.045	0.001
Return on equity	-0.002	0.016	0.000	0.976	0.002	0.154
Loan portfolio change – bottom quartile	-0.256	0.140	-0.222	0.084	-0.549	0.005
Loan portfolio change – top quartile	0.287	0.026	0.098	0.416	0.325	0.015
Change in equity-to-assets ratio – bottom quartile	0.189	0.164	0.049	0.679	0.093	0.515
Change in equity-to-assets ratio – top quartile	0.326	0.018	0.106	0.340	0.165	0.243
Change in loan-to-asset ratio – bottom quartile	0.404	0.003	-0.057	0.668	0.277	0.055
Change in loan-to-asset ratio – top quartile	0.116	0.390	0.092	0.375	0.223	0.107
Change in nonperforming loans-to-loans ratio – bottom quartile	0.396	0.007	0.217	0.072	0.104	0.462
Change in nonperforming loans-to-loans ratio – top quartile	0.560	<.001	-0.002	0.986	0.015	0.921
Change in return on equity – bottom quartile	0.302	0.031	-0.316	0.019	-0.054	0.733
Change in return on equity – top quartile	0.170	0.226	0.037	0.735	0.271	0.046
Change in real estate construction loans – top quartile	-0.123	0.322	0.089	0.364	0.250	0.040
Change in commercial real estate loans – top quartile	-0.089	0.493	0.254	0.018	0.003	0.982
Change in home mortgage loans – top quartile	0.095	0.466	0.060	0.609	-0.082	0.538
Change in other real estate loans – top quartile	-0.165	0.225	-0.017	0.880	-0.023	0.862
Change in commercial loans – top quartile	-0.119	0.407	0.273	0.016	-0.037	0.803
Change in consumer loans – top quartile	0.379	0.002	-0.052	0.654	0.001	0.992
Observations	116224		154579		66597	
Regulatory switches	350		494		318	
Pseudo-R^2	0.240		0.126		0.063	

Table 7. Change in performance surrounding a switch of regulators, by initial and final regulator.

Pre- and post-switch performance for banks that switch primary federal regulators. The data include the five years prior to a switch and the five years following a switch (but not the year of the switch). Data for 1983-1999. The following independent variable are not shown: merger dummy, lead bank dummy, nonlead bank dummies, log(real assets) terms, equity-to-assets ratio (for return and nonperforming ratio only), loans-to-assets ratio (for return and nonperforming ratio only), nonperforming loans-to-loans ratio (except when it is the dependent variable), return on equity (for risk variables), loan portfolio change, and year dummies. All the regressions have 177,445 observations.

	From OCC		From Fed		From FDIC	
Parameter	Estimate	Pr > ChiSq	Estimate	Pr > ChiSq	Estimate	Pr > ChiSq
Dependent variable: return on equity (ROE)						
Trend prior to switch (t-5 to t-1)	0.075	0.005	0.041	0.426	0.004	0.812
Trend after switch (t+1 to t+5)	0.413	0.005	0.519	<.001	-0.046	0.573
Test trend prior to switch = trend after switch (p value)		<.001		0.003		0.548
Adjusted R^2				0.114		
Dependent variable: equity-to-assets ratio						
Trend prior to switch (t-5 to t-1)	-0.002	0.653	-0.014	0.100	-0.010	<.001
Trend after switch (t+1 to t+5)	-0.019	0.213	-0.073	0.004	-0.008	0.551
Test of trend prior to switch = trend after switch (p value)		0.286		0.029		0.899
Adjusted R^2				0.088		
Dependent variable: loans-to-assets ratio						
Trend prior to switch (t-5 to t-1)	0.010	0.644	0.018	0.671	0.106	<.001
Trend after switch (t+1 to t+5)	0.021	0.783	-0.011	0.932	0.263	<.001
Test of trend prior to switch = trend after switch (p value)		0.895		0.956		0.023
Adjusted R^2				0.128		
Dependent variable: nonperforming loans-to-loans ratio						
Trend prior to switch (t-5 to t-1)	0.001	0.807	0.003	0.758	-0.014	<.001
Trend after switch (t+1 to t+5)	-0.022	0.219	-0.088	0.004	-0.043	0.008
Test of trend prior to switch = trend after switch (p value)		0.212		0.005		0.075
Adjusted R^2				0.105		

Table 8. Probability that a bank switches from a particular regulatory agency.
The dependent variable is a dummy variable for whether a bank changes its primary federal regulator in year t. The dummy equals one if the bank changes regulators in year t and equals zero otherwise. For each regression, the sample includes all banks regulated by the named agency at the end of year t – 1. The sample period is 1983-1999. Year dummies are not shown.

	From the OCC		From the Fed		From the FDIC	
Parameter	Estimate	Pr > ChiSq	Estimate	Estimate	Pr > ChiSq	Estimate
Merger dummy	0.543	<.001	0.623	0.543	<.001	0.623
Lead bank in a holding company	0.486	0.006	-0.317	0.486	0.006	-0.317
Nonlead bank with the same regulator as its lead bank	1.166	<.001	1.901	1.166	<.001	1.901
Nonlead bank with a different regulator than its lead bank	1.309	<.001	0.239	1.309	<.001	0.239
Log(real total assets)	0.266	0.866	1.518	0.266	0.866	1.518
Log(real total assets) squared	-0.036	0.705	-0.080	-0.036	0.705	-0.080
Equity-to-assets ratio	-0.013	0.541	-0.048	-0.013	0.541	-0.048
Loans-to-assets ratio	0.004	0.321	-0.008	0.004	0.321	-0.008
Nonperforming loans-to-loans ratio	0.009	0.692	0.050	0.009	0.692	0.050
Return on equity	0.001	0.386	0.001	0.001	0.386	0.001
Loan portfolio change – bottom quartile	-0.260	0.103	-1.028	-0.260	0.103	-1.028
Loan portfolio change – top quartile	0.363	0.004	-0.035	0.363	0.004	-0.035
Change in equity-to-assets ratio – bottom quartile	-0.161	0.247	0.548	-0.161	0.247	0.548
Change in equity-to-assets ratio – top quartile	0.105	0.402	0.006	0.105	0.402	0.006
Change in loan-to-asset ratio – bottom quartile	0.311	0.021	0.148	0.311	0.021	0.148
Change in loan-to-asset ratio – top quartile	0.105	0.411	0.147	0.105	0.411	0.147
Change in nonperforming loans-to-loans ratio – bottom quartile	0.275	0.031	-0.071	0.275	0.031	-0.071
Change in nonperforming loans-to-loans ratio – top quartile	-0.004	0.976	0.319	-0.004	0.976	0.319
Change in return on equity – bottom quartile	0.005	0.974	0.195	0.005	0.974	0.195
Change in return on equity – top quartile	0.310	0.014	0.365	0.310	0.014	0.365
Change in real estate construction loans – top quartile	0.270	0.016	0.210	0.270	0.016	0.210
Change in commercial real estate loans – top quartile	-0.049	0.689	0.168	-0.049	0.689	0.168
Change in home mortgage loans – top quartile	-0.106	0.408	-0.111	-0.106	0.408	-0.111
Change in other real estate loans – top quartile	0.060	0.618	-0.471	0.060	0.618	-0.471
Change in commercial loans – top quartile	-0.005	0.971	-0.245	-0.005	0.971	-0.245
Change in consumer loans – top quartile	-0.126	0.320	0.129	-0.126	0.320	0.129
Observations	52621		14163		102497	
Regulatory switches	376		129		657	
Pseudo-R^2	0.072		0.152		0.180	